RW3

Operating Manual

D430443XA

Vers. 2.0

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GENERAL

This machine has been designed according to CE norms. The materials used in its manufacture are not dangerous and their use makes the machine comply to standards. The machine and all its parts are completely safe to use.

Instructions manual

The instructions manual provided with the machine is essential to its proper use and to carry out the necessary maintenance.
We therefore recommend protecting the manual from damage in a safe sheltered place, easily to hand for quick consultation.

Residual risks

There are no residual risks arising from use of the machine.

Protection and safety precautions for the operator

The operations for which the machine has been designed are easily carried out at no risk to the operator.
The machine is designed with features which make it completely safe in all its parts.

Safety

To operate in complete safety, before using the machine read and fully comprehend the concepts, instructions and regulations described in this user's manual.

- Periodically check the electric wiring. If the wires are frayed or worn, repair or replace immediately.
- Always work with dry hands, cleaning any grease or oil from them.
- Always disconnect the machine when it is not in use or when carrying out maintenance operations.
- Do not tug at the electric wiring and ensure that it does not come into contact with oil, sharp objects or heat. Never remove the earth wire from the plug.
- Ensure that the earth wire is always properly connected.
- Do not use the machine in dangerous environments (damp or wet).
- Always work in a well-illuminated location.
- Keep the working area clear and remove any tools from around the machine before turning it on.
- Any visitors, especially children, must stand at a safe distance from the machine and not be allowed to touch it or any of the wiring.
- Do not use the machine for purposes different from those described in this manual.
- Do not use the machine if the ON/OFF switch is not working properly.

Power supply

The machine is supplied through a 15 Vdc universal power provider, supplied with the machine.

Start-up

The machine is started up by means of the master switch (E).

Machine identification

The machine is provided with an identification label which shows the serial number (fig. 1).

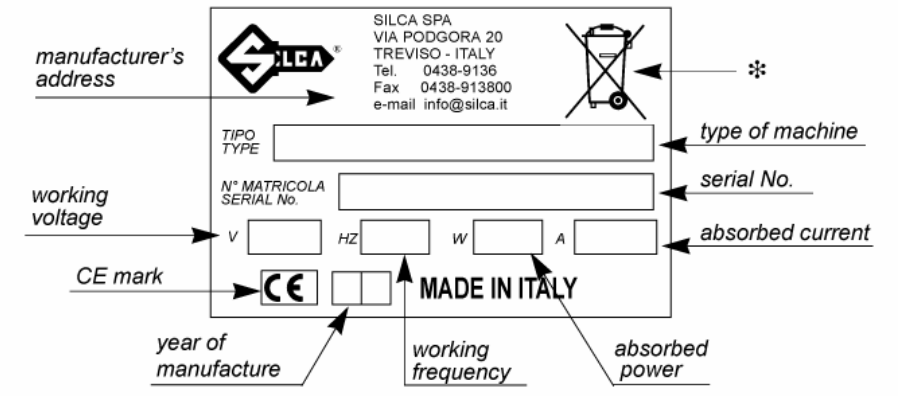

Fig. 1

(*) see chap.10 "MACHINE DESCRIPTION, page 35

1 MACHINE DESCRIPTION

The machine is designed for the making of copies of various car keys with transponders and is simple to use.
In particular, the machine is able to read and display the electronic code stored in the memory of Philips*, Megamos* and Temic* transponders used on the keys, and re-write it on a blank transponder.
The machine works alone or connected to a personal computer. A functions menu is incorporated to meet all the needs arising during operation.
For a list of car makes and models whose keys can be copied, consult the articles published in the Silca catalogues and updates.

1.1 Main Features

Operation modes

- copier/detector - transponder reader/writer
- stand-alone/with personal computer

Special functions

- storage of transponder codes in the archive (max. 99)
- interface with HOLDEN - COMMODORE
- program in various languages
- machine test

Software updating

The machine can be updated by connection to a personal computer via RS232 and USB.

Power supply

- directly from the mains through an external universal power provider and special cable.

1.2 Technical data

POWER SUPPLY

- universal power provider: 100/240 Vac - 47/63 Hz / 15 Vdc - 2,2A
- machine: 15Vdc – 0,35A

ANTENNA FIELD FREQUENCIES

- 125 kHz

DIMENSIONS

Width 245 mm
Length 160 mm
Depth 80 mm

WEIGHT

Kg. 0,60

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1.3 Working parts

The structure of the machine is extremely simple.

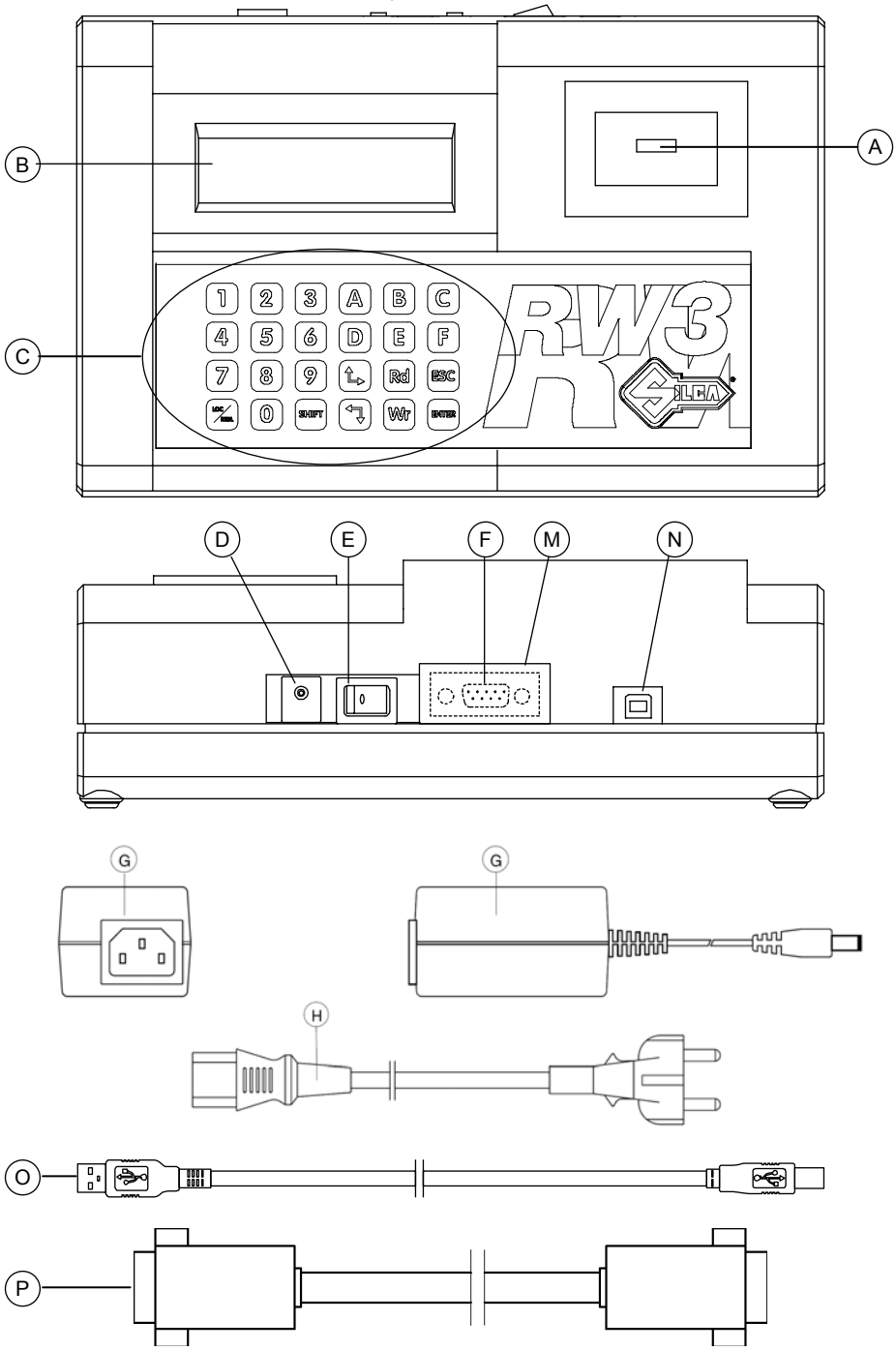

Fig. 2

A – reading/writing antenna
B – liquid crystal display for 20 + 20 characters (2 lines)
C – 24-key keyboard
D – 15 V d.c. power supply socket
E – master switch (POWER ON)
F – RS232 connector (9-pole)
G – 15 V d.c. power provider
H – power supply cable
M – cover
N – USB connector
O – USB cable
P – serial cable

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1.4 Special features

KEYBOARD

The incorporated keyboard (Fig. 2, page 7) allows the user to interact with the machine rapidly and easily. At any given time only the keys relevant to the cycle in progress are enabled.

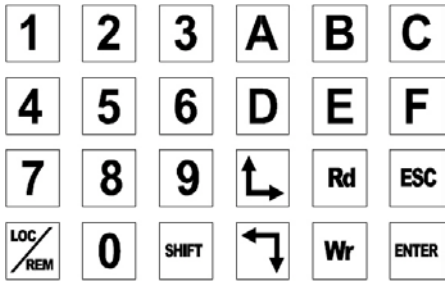
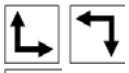


Fig. 3

The following keys are available:

Selection of local operation (STAND-ALONE)/remote (connected to a personal computer).

Entry of the electronic codes.



Up/down arrow keys to move the > up or down the characters on the display - selection. RH/LH operate with the shift key.

Enabling right/left-hand arrow - moving cursor to correct entry, if necessary.

Assent/confirmation for reading the data on the transponder.

Assent/confirmation for writing the data on a transponder.

Assent/confirmation function/selection.

Exit and return to main menu/sub-menus.

LIQUID CRYSTAL DISPLAY

Alphanumeric display with 2 lines of 20 characters each, illuminated from behind.

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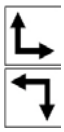
1.5 Symbols used on the display

The wording in a rectangle represents what is shown on the display.
The wording in a square at the side represents the key to press.

	I	N	S	E	R	T		O	R	I	G	I	N	A	L			
	K	E	Y												>	R	D	

Words in a rectangle (more than two lines) represent a full menu with more than two items, which can be displayed by scrolling the > cursor down or up by means of the arrow keys.
When an item has been selected from the menu, press the **ENTER** key.

>	C	O	P	Y														
	I	D	E	N	T	I	F	I	C	A	T	I	O	N				
	E	N	T	E	R	I	N	G				C	O	D	E			
	C	O	D	E		G	E	N	E	R	A	T	I	O	N			
	A	R	C	H	I	V	E											
	H	O	L	D	E	N		C	O	M	M	O	D	O	R	E		
	O	P	T	I	O	N	S											



If a warning appears on the display the machine cannot be used.

	W	R	I	T	I	N	G		E	R	R	O	R					

To quit this condition, press the **ESC** key.

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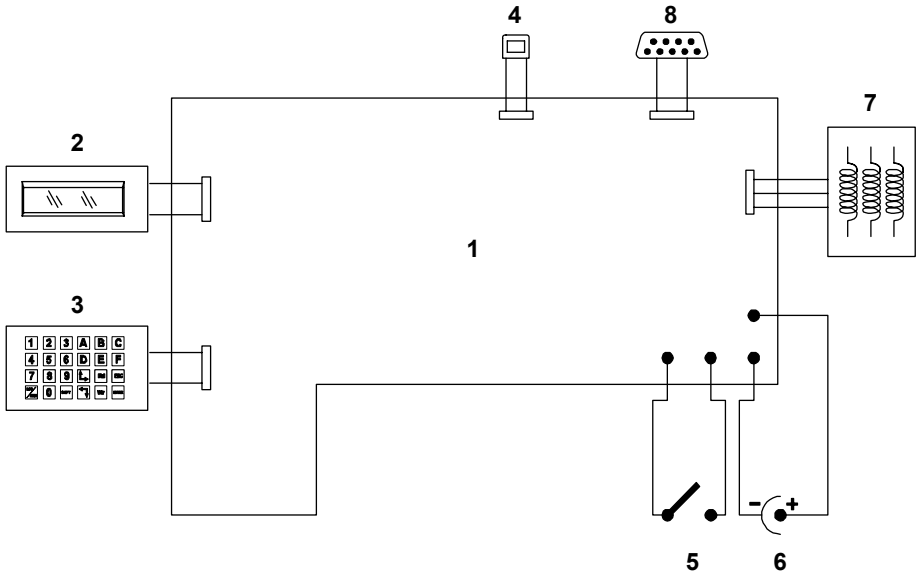
1.6 Electrical/electronic circuit

MAIN PARTS

1. **PRINTED CIRCUIT BOARD:** contains the microprocessor which runs the key reading/writing operations, the supply circuits, interface with the keyboard and display and the connectors between the antennas and personal computer.
2. **DISPLAY** liquid crystal, retro-illuminated, 2 lines of 20 characters.
3. Control **KEYBOARD** with 24 keys.
4. **USB RECEPTACLE**
5. **MASTER SWITCH**
6. **MAINS SUPPLY SOCKET** 15V/350 mA
7. **ANTENNAS** for reading/writing tuned to 125 kHz
8. **RS232 9 pole RECEPTACLE**

OPERATIONAL ELECTRICAL BLOCK/CIRCUIT DIAGRAM



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2 TRANSPORT

The machine is easily transported and is not dangerous to handle. The packed machine can be carried by one person.

2.1 Packing

The packing is designed to ensure safe transportation and protect the machine and all its parts.

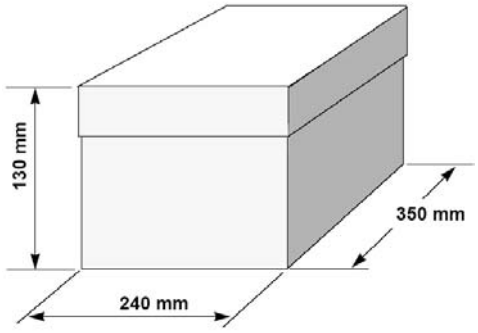

Fig. 4

2.2 Transport

It is advisable to use the packing every time the machine is transported, as this will avoid knocks causing damage.

2.3 Unpacking

To remove the machine from the packing box:

1. it is advisable to open the box without damaging it so that it may be used again (removals, dispatch to manufacturers for repairs or servicing);

2. check the contents of the box, which should comprise:

- 1 machine
- 1 universal power provider
- 1 power cable
- 1 serial cable
- 1 USB cable
- 1 set of documents, including: operating manual and spare parts list
- 1 cd-rom

2.4 Machine handling

When the machine has been unpacked, place it directly on its workbench.

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3 ACCESSORIES PROVIDED

The machine is supplied complete with:

- universal power provider;
- power cable;
- serial cable;
- USB cable;
- user's manual;
- cd-rom for stand-alone operation (to be used only if the program installed on the machine is lost).

4 MACHINE INSTALLATION AND PREPARATION

The machine can be installed by the purchaser and does not require any special skills; it is supplied ready for use. However, some checks and preparation for use need to be carried out by the operator.

4.1 Preparation for use - preliminary operations

- turn on and select local operation (stand-alone);
- set up the language.

4.2 Checking for damage

The machine is solid and compact and will not normally damage if transport, unpacking and installation have all been carried out according to the instructions in this manual.
However, it is always advisable to check that the machine has not suffered any damage.
Should faults be found which are not due to the above mentioned risks, contact the Silca After Sales Service.

4.3 Environmental conditions

To ensure that the best use is made of the machine and relative keys with transponders, the operating temperature should be restricted. **Given the characteristics of the transponder on the key blanks THE KEYS MUST BE CODED IN AN ENVIRONMENT WITH A TEMPERATURE OF 20°C OR OVER.**
The ideal conditions for the machine are therefore:

- temperature between 20 and 40°C;
- relative humidity approx. 60%.

4.4 Positioning

The machine does not require a special location; simply place on a horizontal surface of suitable size.

ATTENTION: the universal feeder provided with the machine and any electronic equipment should be placed at least 150mm from the antenna to avoid their generating interference which could affect reading and/or writing of the transponder (see Fig. 5, page 13).

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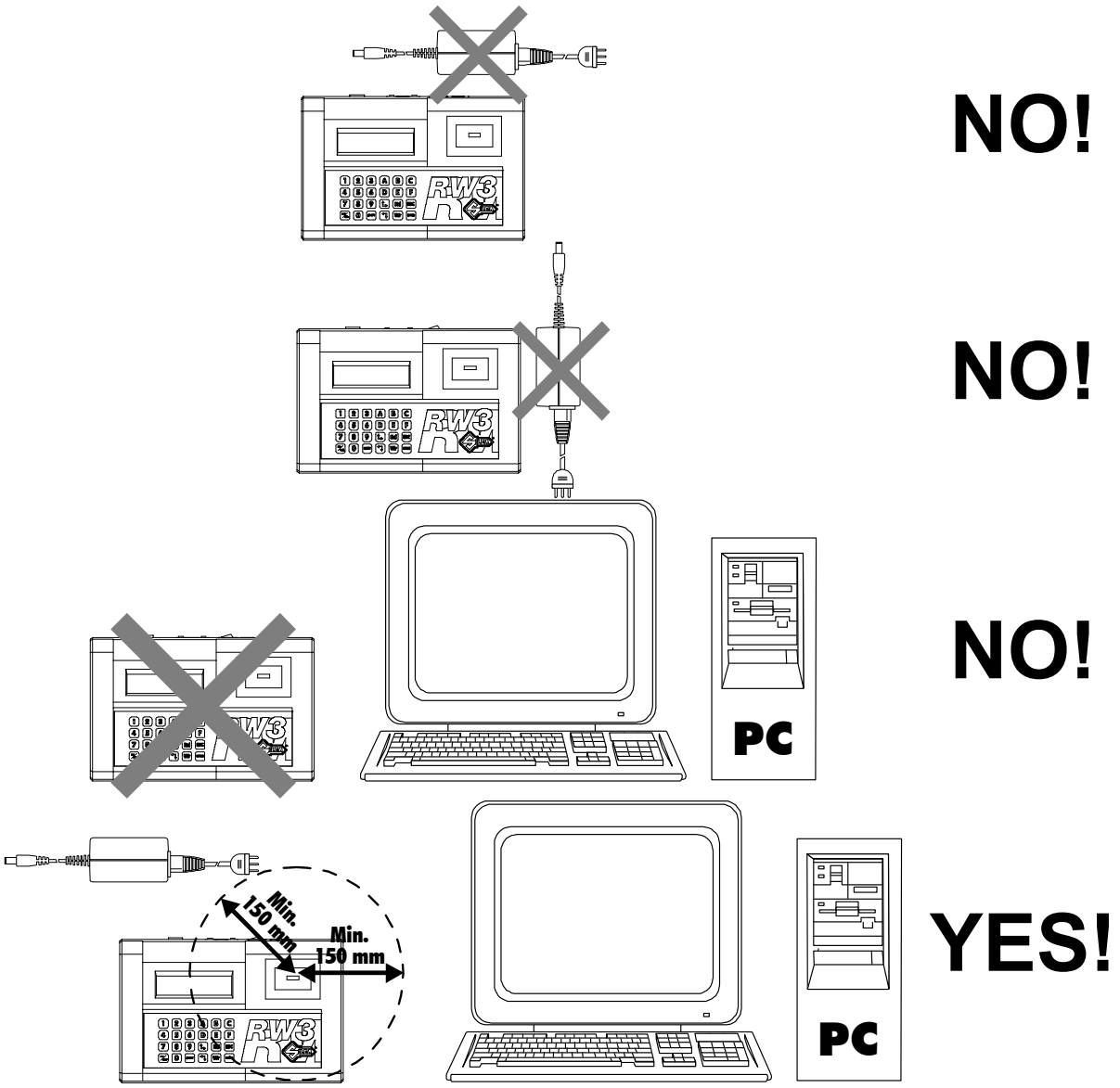

Fig. 5

4.5 Software update

The machine must be connected to a personal computer to update the internal software (for future expansion).

ATTENTION: **the RS232 and USB inputs necessary for connection to a personal computer are placed on the back of the machine. To use the RS232 input, prise off the cover (M) with the aid of a screwdriver (Fig. 2, page 7).**
Use an RS232 serial cable less than 3 metres long, or the USB cable, and follow the instructions given on the update cd-rom.

5 REGULATION AND SETTING OF THE MACHINE

The machine does not need any setting or regulation.

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6 COM-CODE MODULE FOR CODING HOLDEN-COMMODORE KEYS (OPTIONAL)

Operational from version 1.0.

6.1 Operative parts

Q power cord (provided on the Com-Code module)
O serial cable (provided on the Com-Code module)
G universal input (provided on the machine)
P computer connection serial cable (provided on the machine)
N Com-Code
R power lead from vehicle cigarette lighter (provided with Com-Code module) (Fig. 7)

N1 module power input connector
N2 serial connector for PC connection
N3 machine power input connector
N4 serial connector for machine connection
N5 power supply warning light

6.2 Installation

No special skill is required to connect the module to the machine; use the two cords ‘Q – power input’ and ‘O – serial’ provided on the Com-Code module.

6.3 Use

The module does not interfere with machine connection to a PC.
Both the machine and the module can be powered through the vehicle cigarette lighter.
The two figures “Fig. 6“ and "Fig. 7" show the various uses for the machine and module.

N.B: whatever power supply configuration is chosen, the module is active only if the red light (N5) is on.

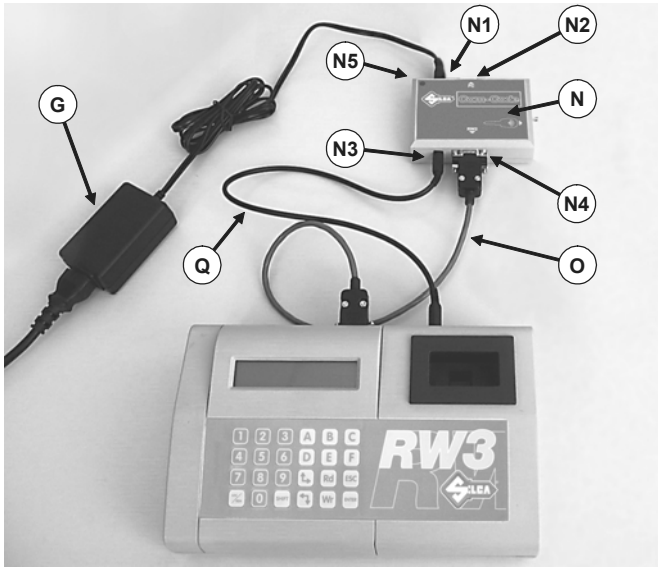

Fig. 6

Machine and module powered by the universal input (with or without connection to a PC)

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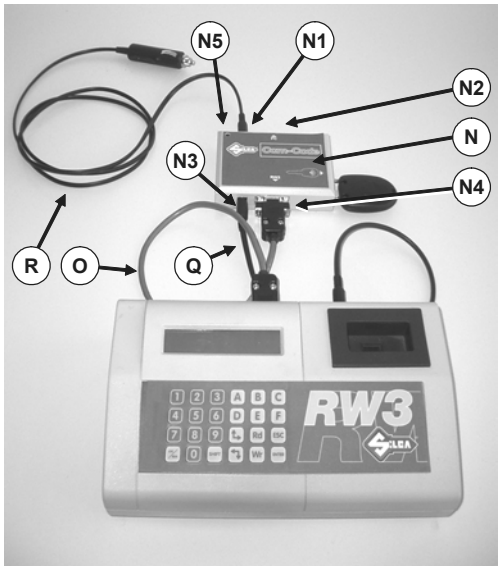

Fig. 7

Machine and module powered from cigarette lighter (with or without connection to personal computer).

6.4 Software upgrade and use with PC

Software for both the machine and the module is upgraded separately and independently through the connections shown in Fig. 8. Use an RS 232 serial cable of less than 3 metres in length or an USB cable and follow the instructions provided with the upgrade cd-rom.

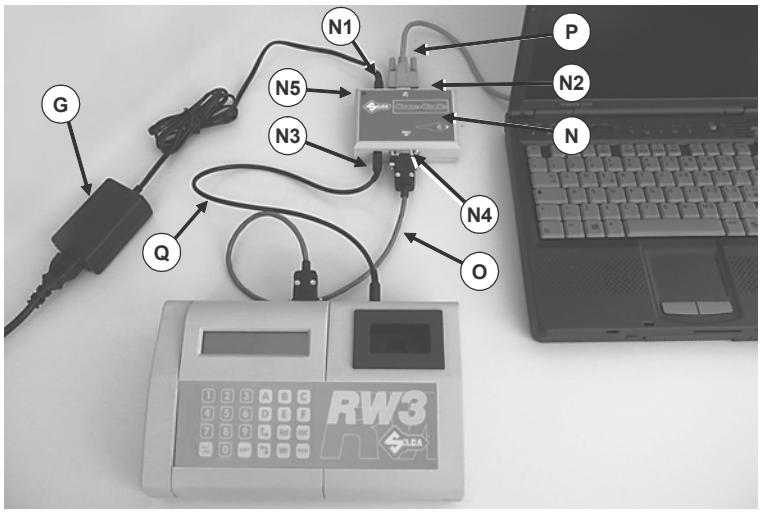

Fig. 8

7 OPERATING THE MACHINE

This chapter describes all the operations necessary to copy, detect, read and write on a key with transponder, including storage in a file of the codes read.
Also described is the use of the Com-Code module for coding Holden-Commodore keys.

7.1 Start-up

When the machine has been turned on the display shows:

*	*	W	A	I	T												*	*

A few seconds later it shows:

		C	O	N	N	E	C	T	E	D		T	O		P	C		

If the display shows the words “CONNECTED TO PC”, it means that the machine is ready and awaiting commands from the personal computer (via serial or USB line) and that it will then be controlled by PC..
All operations without a PC are impeded.

Stand-alone operation

To use the machine without a PC, press the **LOC/REM** key.

							V	E	R	.				X	.	Y			
	P	A	S	S	W	O	R	D						_	_	_	_	_	

The words “VER. X.Y“ give the version of the internal program.

7.2 Main menu

The display shows the following indications, which represent the first two items in the main menu:

>	C	O	P	Y														
	I	D	E	N	T	I	F	I	C	A	T	I	O	N					

The possibilities of choice from the menu are shown in the subsequent display.

>	C	O	P	Y														
	I	D	E	N	T	I	F	I	C	A	T	I	O	N				
	E	N	T	E	R	I	N	G				C	O	D	E			
	C	O	D	E		G	E	N	E	R	E	T	I	O	N			
	A	R	C	H	I	V	E											
	H	O	L	D	E	N		C	O	M	M	O	D	O	R	E		
	O	P	T	I	O	N	S											

To select use the up/down arrow keys until the cursor > is on the item required, then press the **ENTER** key.

7.3 Copying-duplicating keys

This function is activated by selecting "COPY": the machine is ready to make a copy of the electronic transponder code on the original key, on one or more key blanks with transponders.

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7.3.1 Reading the key

The display shows:

	I	N	S	E	R	T		O	R	I	G	I	N	A	L				
	K	E	Y													>	R	D	

Rd

Place the key into the special hole on the front of the machine and push all the way in. Confirm that the key must be read by pressing the **RD** key.

The reading operation begins. For a few seconds the display shows:

	R	E	A	D	I	N	G		I	N		P	R	O	G	R	E	S	S

Should there be any problems when reading the transponder (transponder missing, of a type which cannot be duplicated, Crypto, reading error, etc.) a warning appears (see Ch. 8 - WARNINGS).

When the electronic code has been read successfully, the display shows:

	R	E	M	O	V	E		K	E	Y									

7.3.2 Writing the key

When the key is removed, the display shows:

	I	N	S	E	R	T		B	L	A	N	K		K	E	Y			
																>	W	R	

Wr

Place the key with non-coded transponder into the machine and confirm that the key must be written by pressing the **WR** key.
Checking the transponder on the key begins to ensure that it is compatible with the type of transponder previously read.

Should there be any problems when checking the transponder (transponder missing, of a type which cannot be duplicated, Crypto, reading error, etc.) a warning appears (see Ch. 8 - WARNINGS).

When the electronic code has been read successfully (transponder detected), the machine checks whether the transponder has already been coded; if so, the display shows:

	A	L	R	E	A	D	Y		P	R	O	G	R	A	M	M	E	D	
	O	V	E	R	W	R	I	T	E							>	W	R	

Wr

To confirm re-writing of the key; press the **WR** key.

The writing operation begins. For a few seconds the display shows:

	W	R	I	T	I	N	G		I	N		P	R	O	G	R	E	S	S

When the electronic code has been written successfully, the display shows:

	O	P	E	R	A	T	I	O	N		C	O	M	P	L	E	T	E	D

Should there be any problems when writing the transponder (writing errors) a warning appears chapter 8 - WARNINGS.

After a few seconds the machine asks if further copies of the key must be made with the same code; the display shows:

	O	T	H	E	R		C	O	P	I	E	S	?					
					N	O	>	E	S	C		Y	E	S	>	E	N	T

ENTER

- to continue without making other copies, press the **ESC** key;
- to make another copy, press the **ENTER** key.

In this case the machine will repeat the writing cycle procedure, etc.

7.3.3 Memorize code

When the machine has made one or more copies, it asks if the electronic code read must be stored in the internal memory so that it can be used to make a new key or transferred to the PC. The display shows:

	M	E	M	O	R	I	Z	E			C	O	D	E	?			
					N	O	>	E	S	C		Y	E	S	>	E	N	T

ENTER

- to continue without memorizing, press the **ESC** key;
- to memorize the code, press the **ENTER** key.

If the code must be memorized, the display shows:

C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C		X	X
C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C		N	N

ESC

Legend of data shown on display

- **CCCC.... CCCC:** electronic transponder code
- **XX:** identification number of type of transponder (ID)
- **NN:** position in the file assigned to the code (progressive number)
- to continue, press the **ESC** key.
- The display shows:

	R	E	M	O	V	E		K	E	Y								

When the key has been removed, the cycle starts again from the beginning.

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7.4 Transponder identification

This function is activated by selecting "IDENTIFICATION": the machine is ready to check the type of transponder (Megamos*, Philips*, Temic*, Texas*) on the key.

Type of reading

The number which appears in brackets, e.g. (33), indicates the type of transponder detected on the key and is useful information for the After-sales Service in identifying faults or faulty operation of the transponder.

Type of transponder number	
SILCA blank	(21)
SILCA blank	(22)
SILCA blank	(23)
TEMIC* (Fiat)	(11)
TEMIC* (Mazda)	(12)
MEGAMOS*	(13)
PHILIPS* (orig. or emul.)	(33)
PHILIPS* (orig.)	(73)
PHILIPS* emulating MEGAMOS* (Audi)	(53)
PHILIPS* emulating MEGAMOS* (VDO)	(93)
PHILIPS* Crypto	(44)
MEGAMOS* Crypto	(48)
TEXAS*	(4C)
TEXAS* Crypto	(60)
TEXAS* Crypto MITSUBISHI 3	(61)
TEXAS* Crypto MITSUBISHI 2	(62)
TEXAS* Crypto FORD 2	(63)
TEXAS* Crypto (RENAULT < 2000 , CHRYSLER, JEEP)	(64)
TEXAS* Crypto (SUZUKI)	(65)
TEXAS* Crypto (TOYOTA/LEXUS)	(67)
TEMIC* Crypto	(8C)
SAAB not duplicable	(8D)
PHILIPS* Crypto OPEL	(40)
PHILIPS* Crypto NISSAN	(41)
PHILIPS* Crypto VAG	(42)
PHILIPS* Crypto PEUGEOT	(45)
PHILIPS* Crypto 2	(46)

If the display shows the warning 'TRANSPONDER CRYPTO' it means that the key has a transponder with a code that cannot be copied (unwritable) (see chapter 7.5 - Transponder Philips* Crypto (40, 41, 42, 44, 45, 46) and Megamos* Crypto (48), chapter 7.6 – "Texas Crypto Transponder (60, 61, 62, 63, 64, 65, 67)" and chapter 8 – "WARNINGS").

7.4.1 Reading the code and type of transponder (ID)

The display shows:

	I	N	S	E	R	T		O	R	I	G	I	N	A	L			
	K	E	Y													>	R	D

Place the key into the special hole and press the **RD** key; the reading operation begins.
For a few seconds the display shows:

	R	E	A	D	I	N	G		I	N		P	R	O	G	R	E	S	S

Should there be any problems when reading the transponder (transponder missing, of a type which cannot be duplicated, crypto, reading error, etc.) a warning appears chapter 8 – "WARNINGS".
When the electronic code has been read successfully, the display shows:

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C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C		X	X
C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C		N	N

ENTER

- **CCC.... CCCC:** electronic transponder code
- **XX:** identification number of type of transponder (ID)
- **NN**: position in the file assigned to the code (progressive number)
- to continue without memorizing, press the **ESC** key
- to memorize, press the **ENTER** key.

Electronic codes from Megamos* and Temic* transponders.

Due to the special reading system used the same key can be read at random from different points in the code, showing codes on the display which appear to be different. However, the code is valid in all cases as it will be detected by the car centralized system, which will begin to read from as established point and not at random.

7.4.2 Memorize code

If the code must be memorized (**ENTER** key), the display shows:

	K	E	Y		M	E	M	O	R	I	Z	E	D						

ESC

To return to the beginning, press the **ESC** key.

7.5 Transponder Philips* Crypto (40, 41, 42, 44, 45, 46) and Megamos* Crypto (48)

One of the features of the Philips* Crypto transponder (identified by numbers 40, 41, 42, 44, 45, 46) and of the transponder Megamos* Crypto (identified by number 48) is a legible code (called **ID** or **DETECTOR**) which **is not the code for starting the engine** but merely a 'name' or 'identity' that is different for each transponder and cannot be changed. The detector is used by Crypto central systems on vehicles to check whether the transponder is already stored in the memory. Only if this is so can the device check the hidden Crypto code for starting the engine.

If there is no detector in the central system, it must be memorized by means of the diagnosis device in the possession of the dealer or also with the SDD device provided by SILCA, for the vehicle models enabled (see HELP F5). After this operation the central system will be able to read the transponder properly and check the hidden Crypto code. With this function Philips* Crypto transponders can be used in the central system of vehicles with FIXED CODES (not Crypto), which read the **detector** as the **fixed code for starting the engine**.

In this case the full potential of the Philips* Crypto transponder is not utilized because the central system is unable to read and use the hidden part of the code (Crypto). However, it does mean that car manufacturers can already use only the Philips* Crypto transponder on their original spare keys, irrespective of whether it is used fully (on vehicles with Crypto central systems) or partially, reading the DETECTOR only (on vehicles with fixed code central systems). It is therefore possible to duplicate only the DETECTOR code of a Philips* Crypto transponder onto a Philips* or Silca blank transponder.

Note: this operation can be carried out only after ascertaining that the vehicle central system is of the FIXED CODE type (this information could be provided by the vehicle owner or the dealer, based on the year of registration), otherwise the duplicated key will not work.

7.5.1 Memorizing the identification code

To memorize the identification code, proceed as follows:

- in the IDENTIFICATION function, as described in paragraph 7.4.1 - Reading the code and type of transponder (ID). If the following message appears after the original key has been read**:**

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	T	R	A	N	S	P	O	N	D	E	R		C	R	Y	P	T	O	
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E		4	4

ENTER

Or one of the messages listed in paragraph 7.5.1. Press **ENTER** to memorize the code.
The display shows the electronic code for the detector:

C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C		X	X
C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C		4	4

- Or (40,41,42,45, 46, 48);

- to proceed without memorizing, press **ESC;**
- to memorize the code, press **ENTER**.

7.6 Texas* Crypto Transponder (60, 61, 62, 63, 64, 65, 67)

When a key with a Texas* Crypto type transponder is fitted into the machine, the 'Copy' and 'Identification' menus show the relative ID code on the display.

The display shows the following message:

T	R	A	N	S	P	.	T	E	X	A	S		C	R	Y	P	T	O	
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E		X	X

More precise identification of the various types of Texas Crypto transponders can be obtained in the following way:
- Press **RD** on the machine.
- If the initial selection '**COPY**' has been used, the display will show the message:

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E						X	X								-	-

ESC

The data shown mean:
- **XX** : identification number of the type of transponder (ID).
- press **ESC** to continue**.**

If the initial selection 'IDENTIFICATION' has been used, the display will show the message:

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E						X	X								N	N

ENTER

The data shown mean:
XX : identification number of the type of transponder (ID).
NN : position in the memory assigned to the data read (progressive number).
- press **ESC** to continue without memorizing**.**
- press **ENTER** to memorize**.**

N.B: If two asterisks "" appear in the place of the transponder ID, the transponder being read is unknown.**

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E						*	*								N	N

Press the "Arrow ⇩" key to see on the display some of the data for the previously read transponder. This function may be useful when reading new transponders not yet identified. Please transmit these data to Silca After-Sales Service (to facilitate this, the data can be saved in the machine memory).

P	W		*	*			I	D		*	*							X	X

ENTER

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M	C		*	*			*	*	*	*	*	*		*	*			N	N

XX : identification number of the type of transponder (ID).
NN : position in the memory assigned to the data read (progressive number).
All the other information on the display shows the data read on the transponder.

- press **ESC** to continue without memorizing.
- press **ENTER** to memorize.

7.7 Copies with code entry

A key with transponder can be copied if the electronic code is known.
The function for copying keys from a code entered by the user is activated by selecting "ENTERING CODE".
The display shows the first two items in the sub-menu: the choices possible are shown in the following way:

O	R	I	G	I	N	A	L		T	R	A	N	S	P	O	N	D	E	R
>	M	E	G	A	M	O	S		1	3	-								
	P	H	I	L	I	P	S		3	3	-	7	3						
	P	H	I	L	I	P	S		5	3	-	9	3						
	T	E	M	I	C				1	1	-								
	T	E	M	I	C				1	2	-								
	T	E	X	A	S				4	C									

The numbers 13, 33, 73, 53, 93, 11, 12, 4C indicate the type of transponder.
Select the type of transponder from which the code to be copied was originally read, then press the **ENTER** key.

7.7.1 Entering the code

The electronic transponder code is made up of numbers, from 0 to 9, and the letters A B C D E F.
If Philips* is selected, two fields of 16 characters appear on the display.

-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-			
-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-			

If MEGAMOS*, TEMIC* or TEXAS* are selected, one field of 16 characters appears on the display.

-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-			

Enter the code, then press the **ENTER** key.
To alter any wrong data use the **SHIFT** and **LH/RH ARROWS** to move to the character to be corrected, then press the **ENTER** key.
The machine makes a check on the special code fields; if any data is incorrect, a warning message appears:

	I	N	C	O	R	R	E	C	T		C	O	D	E					

- to quit, press the **ESC** key and repeat the operation.

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7.7.2 Writing the key

If the code entered is correct, the display shows:

	I	N	S	E	R	T		B	L	A	N	K		K	E	Y			
																>	W	R	

Place the key with non-coded transponder into the machine and press the **WR** key.

The transponder on the key blank is checked.

Should there be any problems when checking the transponder (transponder missing, wrong transponder, of a type which cannot be written on, Crypto,) a warning appears (see Ch. 8 - WARNINGS).

When the electronic code has been read successfully, the machine checks whether the transponder has already been coded; if so, the display shows:

	A	L	R	E	A	D	Y		P	R	O	G	R	A	M	M	E	D	
	O	V	E	R	W	R	I	T	E	?						>	W	R	

– press the **WR** key to confirm.

The writing operation begins. For a few seconds the display shows:

	W	R	I	T	I	N	G		I	N		P	R	O	G	R	E	S	S

When the electronic code has been written successfully, the display shows:

	O	P	E	R	A	T	I	O	N		C	O	M	P	L	E	T	E	D

Should there be any problems when writing the transponder (writing errors) a warning appears (see Ch. 8 - WARNINGS).

After a few seconds the machine asks if further copies of the key must be made; the display shows:

	O	T	H	E	R		C	O	P	I	E	S	?						
					N	O	>	E	S	C		Y	E	S	>	E	N	T	

– to continue without making other copies, press the **ESC** key;
– to make another copy, press the **ENTER** key.

7.8 Code generation

If you are not in possession of the key or original code with which to make a copy of a transponder key, the automatic CODE GENERATION function on RW3 can be used. The electronic code is automatically calculated by the software, which retraces the structure of the original code (specific for each make of vehicle).
In this way a valid key can be made, ready to be memorized in the vehicle central unit.
When the electronic key code has been generated **the key must be programmed in the vehicle central unit by means of the specific programming procedure** (see SDD PROGRAMMING SECTION column 15, 27 or CAR KEYS SECTION column 15, 16 in the transponder guide).
This function is activated by selecting “CODE GENERATION”.
The display will show the first two items in the sub-menu; the choices are given in the following illustrations:

	C	O	D	E		G	E	N	E	R	A	T	I	O	N			
>	(	B	-	F	)		B	O	S	C	H	-	F	I	A	T		
	(	M	E	G	)		M	E	G	A	M	O	S					
	(	M	-	V	)		M	E	G	A	M	O	S	-	V	D	O	
	(	T	-	F	)		T	E	M	I	C	-	F	I	A	T		
	(	S	-	O	)		S	I	E	M	E	N	S	-	O	P	E	L
	(	S	-	V	)		S	I	E	M	E	N	S	-	V	W		
	(	G	-	V	)		P	S	A		V	A	L	E	O			
	(	G	-	C	)		P	S	A		C	H	P					
	(	G	-	N	)		N	I	S	S	A	N						

Select the type of generation using as a reference the generation associated with the car model (see “SDD PROGRAMMING SECTION” column 12 or “CAR KEYS SECTION” column 12 in the transponder guide), and press **ENTER**.

The display will show the code:

X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X
X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X

– Press **ENTER** to continue, press **ESC** to quit:

	I	N	S	E	R	T		B	L	A	N	K		KEY					
																>	W	R	

Place the key all the way into the special hole on the vehicle dashboard then confirm that the key is to be written; press the **WR** key.
If problems occur when checking the transponder (transponder absent, wrong, unwritable, crypto) a message will appear (see chapter 8 - WARNINGS).
If the key has been properly read, the machine checks whether the transponder has already been coded; if the result is positive, the display will show:

	A	L	R	E	A	D	Y		P	R	O	G	R	A	M	M	E	D	
	O	V	E	R	W	R	I	T	E	?						>	W	R	

– to confirm press the **WR** key**.**

The writing operation begins. For a few seconds the display shows:

	W	R	I	T	I	N	G		I	N		P	R	O	G	R	E	S	S

If the key has been properly written, the display will show:

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	O	P	E	R	A	T	I	O	N		C	O	M	P	L	E	T	E	D

If problems occur when writing the transponder (writing error), a warning message will appear (see chapter 8 - WARNINGS).

After a few seconds the machine queries if other copies must be made; the display shows:

	O	T	H	E	R		C	O	P	I	E	S	?					
					N	O	>	E	S	C		Y	E	S	>	E	N	T

ENTER

- to continue without making other copies, press the **ESC** key**;**
- to make another copy, press the **ENTER** key.

7.9 Codes archive

Up to 99 codes for keys with transponders can be stored in the machine's memory. After it has been read, a code can be archived in position 'NN'. With this function access can be gained to the archive, the code can be recalled and displayed and, if required, used to make further copies.

7.9.1 Display of archived code

This function is activated by selecting "ARCHIVE". The display shows:

	D	I	S	P	L	A	Y		C	O	D	E						
	P	O	S	I	T	I	O	N	?							>	N	N

ENTER

Enter the required 'NN' position in the memory and press the **ENTER** key.
If there is no code in position 'NN', the display shows:

	N	O		C	O	D	E		A	T								
	P	O	S	I	T	I	O	N									N	N

ESC

- to return to the beginning, press the **ESC** key.

If there is a transponder code in position "NN", the display shows:

C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C	X	X
C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C	N	N

ENTER

- to continue without making a copy, press the **ESC** key.
- to make a copy of the key from the code, press the **ENTER** key.

Note: when the file is full (100 codes memorized) the message in the NN is: ==

C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C	X	X
C	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C	=	=

ENTER

In this state new codes cannot be memorized. Delete, or transfer the file to STP then delete, in order to continue the code memorizing operation.

7.9.2 Writing the key

The display shows:

	I	N	S	E	R	T		B	L	A	N	K		K	E	Y		
																>	W	R

Wr

Place the key with non-coded transponder into the machine and press the **WR** key.

Should there be any problems when checking the transponder a warning appears chapter 8 - WARNINGS.
When the electronic code has been read successfully and the transponder has already been coded, the display shows:

	A	L	R	E	A	D	Y		P	R	O	G	R	A	M	M	E	D
	O	V	E	R	W	R	I	T	E	?						>	W	R

Wr

– to confirm, press the **WR** key.

The writing operation begins. For a few seconds the display shows:

	W	R	I	T	I	N	G		I	N		P	R	O	G	R	E	S	S

When the electronic code has been written successfully, the display shows:

	O	P	E	R	A	T	I	O	N		C	O	M	P	L	E	T	E	D

Should there be any problems when writing the transponder (writing errors) a warning appears chapter 8 - WARNINGS.

After a few seconds the machine asks if further copies of the key must be made; the display shows:

	O	T	H	E	R		C	O	P	I	E	S	?						
					N	O	>	E	S	C		Y	E	S	>	E	N	T	

ENTER

– to continue without making other copies, press the **ESC** key;
– to make another copy, press the **ENTER** key.

7.10 Holden Commodore

This function is used when the machine is connected to the relevant module for copying or coding Holden - Commodore keys.
When this function is selected the display shows the two items on the menu for this type of key.

>	C	O	P	Y															
	E	N	T	E	R	I	N	G		C	O	D	E						

Select the relevant item, press the **ENTER** key.

7.10.1 Copy

ATTENTION: **before pressing ENTER, thereby activating selection, place the original key to be cut on the module, taking care that there is contact between the terminal on the key and the sprung contact on the module through which the code is communicated (see Fig. 9).**

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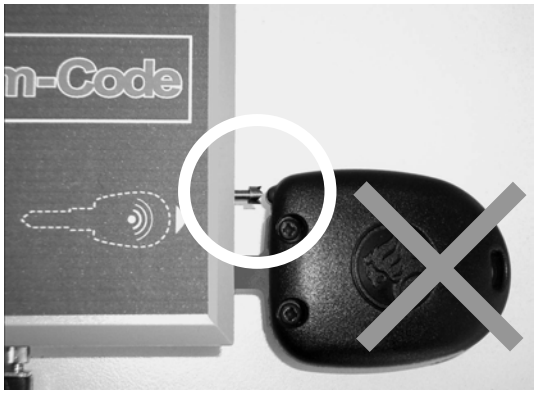
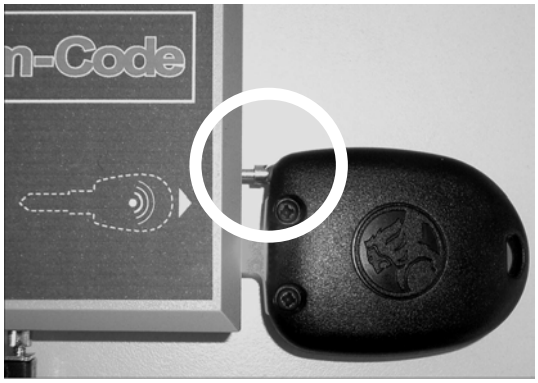


NO!



YES!

Fig. 9

The reading operation begins. For a few seconds the display shows:

	R	**E**	**A**	**D**	**I**	**N**	**G**		**I**	**N**		**P**	**R**	**O**	**G**	**R**	**E**	**S**	**S**

If there are reading problems (key missing, not positioned correctly, reading error, etc.) a warning message appears (see Ch. 8 “WARNINGS“).

If the electronic code has been read properly, the words below appear:

	R	**E**	**M**	**O**	**V**	**E**		**K**	**E**	**Y**									
X	**X**	**X**	**X**	**X**	**X**														

N.B: XXXXXX is the electronic code read from the original key

The original key can now be removed from the module.
Press **ENTER**, the message appears:

	I	**N**	**S**	**E**	**R**	**T**		**B**	**L**	**A**	**N**	**K**		**K**	**E**	**Y**			
																>	**W**	**R**	

When the key blank is fitted into the module and the **WR** key pressed, the following message appears for a few seconds:

	W	**R**	**I**	**T**	**I**	**N**	**G**		**I**	**N**		**P**	**R**	**O**	**G**	**R**	**E**	**S**	**S**

If writing has been carried out properly, the message below appears:

	O	P	E	R	A	T	I	O	N		C	O	M	P	L	E	T	E	D

If there are problems during writing (key missing, not positioned correctly, reading error, etc.), a warning message appears (see Ch. 8 “WARNINGS“).
Press **ESC** to return to the initial menu.

>	C	O	P	Y														
	E	N	T	E	R	I	N	G		C	O	D	E					

7.10.2 Enter code

When “ENTER CODE“ is selected on the display, the following message appears:

	H	O	L	D	E	N		C	O	M	M	O	D	O	R	E		
_	_	_	_	_	_													

Digit the code, which comprises numbers from 0 to 9.

ATTENTION: **fill the whole field with 6 numbers, adding zero to the beginning of the code, if necessary. E.g. if the code is 1368 digit 001368.**

This security code must be the one for the vehicle on which the key will operate and must be known. If this is not so the vehicle system will not enable the key to start the engine.
Press **ENTER**, the message appears:

	I	N	S	E	R	T		B	L	A	N	K		K	E	Y		
																>	W	R

After the key blank is fitted into the module and the **WR** key pressed, the following message appears for a few seconds:

	O	P	E	R	A	T	I	O	N		C	O	M	P	L	E	T	E	D

If there are problems during writing (key missing, not positioned correctly, reading error, etc.) the following warning message appears (see Ch. 8 “WARNINGS“).

7.11 Options

This function is activated by selecting "OPTIONS". The display shows the first two items in the sub-menu. The choices possible are shown in the following illustration:

>	L	A	N	G	U	A	G	E										
	C	A	N	C	.	C	U	S	T.		A	R	C	H	I	V	E	
>	K	E	Y	B	O	A	R	D		C	H	E	C	K				
	M	O	D	U	L	E												

Select the item required and press the **ENTER** key.

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7.11.1 Language

Selecting ‘LANGUAGE’ gains access to a menu with which to vary the language to be used:

>	I	T	A	L	I	A	N	O										
	E	N	G	L	I	S	H											
	F	R	A	N	C	A	I	S										
	D	E	U	T	S	C	H											
	E	S	P	A	N	O	L											

Select the language required and press the **ENTER** key.
This is confirmed by the display showing the selected language. E.g.:

>	E	N	G	L	I	S	H											

– to return to the beginning, press the **ESC** key.

7.11.2 Deleting archive

With this option the memory for the file containing the keys read and stored can be deleted.
The display shows:

C	O	N	F	I	R	M		C	A	N	C	E	L	L	A	T	I	O	N
					N	O	>	E	S	C		Y	E	S	>	E	N	T	

You are required to confirm deletion of the code file; press the **ENTER** key.
When the operation has been carried out, the display shows:

	C	A	N	C	E	L	L	A	T	I	O	N						
	C	A	R	R	I	E	D		O	U	T							

– to return to the beginning, press the **ESC** key.

7.11.3 Testing the keyboard

With this option the operation of all the keys can be checked.
The display shows:

	P	R	E	S	S		K	E	Y									

When each key is pressed the corresponding number or letter appears on the right hand side of the display.

Key	**Display**
0 - 9	0 - 9
A B C D E F	A B C D E F
Right-hand arrow	>
Left-hand arrow	<
SHIFT	SH
RD	RD
WR	WR
ENTER	EN

– to return to the beginning, press the **ESC** key.

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7.12 Module

This option makes it possible to check proper operation of any module connected to the machine.
Select the option and press the **ENTER** key.
If the module is not connected to the machine, or is faulty, or connected to the machine but not properly powered (see Ch. 6) the display will show:

	M	O	D	U	L	E		N	O	T		D	E	T	E	C	T	E	D

ESC

– press **ESC** to continue.

If the module is properly connected to the machine, the module identification and the software version it uses will appear.

	H	O	L	D	E	N		C	O	M	M	O	D	O	R	E		
	V	.		X	.	X												

ESC

– press **ESC** to continue.

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8 WARNINGS

When the machine is turned on, the state of the battery is checked.
During normal operation, when carrying out the different procedures/functions from the main menu (copying, detecting, entering codes, filing) the machine can detect any problems or faults which may occur when reading, checking or writing the transponder in the key.
The following paragraphs illustrate all the possible situations which can stop the machine, and the warning messages which appear for the operator's information.

8.1 Messages during key reading

If there are problems during reading of the transponder, a warning message appears.
TYPES OF MESSAGES WHICH MAY APPEAR AT THE END OF THE READING STAGE

1

	T	R	A	N	S	P	O	N	D	E	R							
	N	O	T		D	E	T	E	C	T	E	D						

2

	R	E	A	D	I	N	G		E	R	R	O	R					

3

C	R	Y	P	T	O		T	R	A	N	S	P	O	N	D	E	R	
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	X	X

4

C	R	Y	P	T	O		T	R	A	N	S	P	O	N	D	E	R	
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	4	4

5

	T	R	A	N	S	P	O	N	D	E	R							
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	8	D

6

O	P	E	L		T	R	A	N	S	P	.		C	R	Y	P	T	O
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	4	0

7

N	I	S	S	A	N		T	R	A	N	S	.		C	R	Y	P	T	O
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	4	1

8

V	A	G		T	R	A	N	S	.		C	R	Y	P	T	O		
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	4	2

9

P	E	U	G	E	O	T		T	R	A	N	S	.	C	R	Y	P	T	O
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	4	5

10

C	R	Y	P	T	O	2		T	R	A	N	S	P	O	N	D	E	R	
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	4	6

11

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E							6	0							-	-

12

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E							6	1							-	-

13

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E							6	2							-	-

14

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E							6	3							-	-

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T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E							6	4							-	-

16

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E							6	5							-	-

17

T	E	X	A	S		T	R	A	N	S	P	.		C	R	Y	P	T	O
T	Y	P	E							6	7							-	-

MEANING: THE ORIGINAL KEY:

1) has no transponder or is badly positioned;
2) has a faulty transponder, cannot be read properly or does not work;
3) has a MEGAMOS* (48) or TEMIC* (8C) CRYPTO transponder;
4) has a PHILIPS*(44) "CRYPTO" transponder;
5) has a SAAB (8D) transponder (cannot be copied);
6) contains a Crypto transponder, PHILIPS (40) for OPEL;
7) contains a Crypto transponder, PHILIPS (41) for NISSAN;
8) contains a Crypto transponder, PHILIPS (42) for VAG;
9) contains a Crypto transponder, PHILIPS (45) for PEUGEOT;
10) contains a Crypto 2 transponder, PHILIPS (46).
11) contains a Crypto Texas* transponder, type (60)
12) contains a Crypto Texas* transponder, type (61) for Mitsubishi
13) contains a Crypto Texas* transponder, type (62) for Mitsubishi
14) contains a Crypto Texas* transponder, type (63) for Ford
15) contains a Crypto Texas* transponder, type (64) for Renault < 2000 , Chrysler, Jeep
16) contains a Crypto Texas* transponder, type (65) for Suzuki.
17) contains a Crypto Texas* transponder, type (65) for Toyota/Lexus.

In case 1, try placing the key in different positions to be read.
In case 2, use another key with transponder and repeat the operations.
In cases 3, 10 the code cannot be read and the key cannot be copied.
In cases 4, 6, 7, 8, 9 only the ID can be copied, and not the key itself (paragraph 7.3.1 – Reading the key).
In case 5, 11, 12, 13, 14, 15, 16, 17 the key cannot be copied.

– To return to the beginning, press the **ESC** key.

* Megamos, Philips, Temic, Texas are registered trade marks.

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8.2 Messages during key writing

If there are problems during checking of the transponder, a warning message appears.
TYPES OF MESSAGES WHICH MAY APPEAR AT THE END OF THE CHECKING STAGE

1

	T	R	A	N	S	P	O	N	D	E	R							
	N	O	T		D	E	T	E	C	T	E	D						

2

	I	N	C	O	R	R	E	C	T								X	X
	T	R	A	N	S	P	O	N	D	E	R							

3

C	R	Y	P	T	O		T	R	A	N	S	P	O	N	D	E	R	
	C	A	N	N	O	T		W	R	I	T	E					X	X

4

C	R	Y	P	T	O	2		T	R	A	N	S	P	O	N	D	E	R
	C	A	N	N	O	T		D	U	P	L	I	C	A	T	E	4	6

MEANING: THE KEY BLANK:

1) has no transponder or is badly positioned;

2) has a transponder which is not compatible with the type of transponder needed to make a copy;

3) has a PHILIPS*[*] (40) (41) (42) (44) (45), crypto 2 (46), MEGAMOS* (48), TEXAS* (60) (61) (62) (63) (64) (65) (67) or TEMIC* (8C) CRYPTO transponder;

4) has a PHILIPS* CRYPTO 2 transponder.

In cases 1 and 2, repeat the writing operation on a new key.
In cases 3, 4 the key cannot be written and therefore cannot be copied.

– To return to the beginning, press the **ESC** key.

If there are problems during writing of the transponder, a warning message appears.

TYPES OF MESSAGES WHICH MAY APPEAR AT THE END OF THE WRITING STAGE

	W	R	I	T	I	N	G		E	R	R	O	R					

MEANING: THE KEY BLANK:
– has a faulty transponder, one which cannot be written properly or one which is protected during writing operations.

- To return to the beginning, press the **ESC** key.

[*] * Megamos, Philips, Temic, Texas are registered trade marks.

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9 MAINTENANCE

ATTENTION: for repairs or replacement of parts for maintenance, the 'CE' mark is guaranteed only if original spare parts provided by the manufacturer are used.

The machine does not need any special maintenance.

Periodically clean the key housing hole with a brush.

This operation should be carried out with the machine disconnected from the mains and turned off.

ATTENTION: do not use compressed air

ATTENTION: do not open the machine for any reason whatsoever

Before starting any type of maintenance (check-up or replacement of parts) read the following instructions:

- never carry out any maintenance operation with the machine on;
- always disconnect from the mains;
- follow the instructions in the manual;
- use original spare parts.

9.1 Trouble shooting

FAULT	PROBABLE CAUSE
DISPLAY - WHEN THE MACHINE IS ON THE DISPLAY IS BLANK	A) CHECK WIRING, CONNECTIONS B) REPLACE: - DISPLAY (AFTER-SALES SERVICE) - CONTROL PCB (AFTER-SALES SERVICE)
KEYBOARD - IS NOT WORKING ON STAND - ALONE - DOES NOT OBEY COMMANDS	A) CHECK THE CONNECTING CABLES - REPLACE THE KEYBOARD (AFTER-SALES SERVICE)
ANTENNA - DOES NOT READ, DOES NOT WRITE	A) CHECK WIRING - REPLACE ANTENNA (AFTER-SALES SERVICE)

The indications above relate to the probable causes of the faults described. They are to be considered indicative and not a comprehensive list of the likely causes of faulty operation.

In the event of any other problems of faulty operation, contact the After-Sales Service.

9.2 Checking the wiring

When it becomes necessary to check the internal wiring on the machine proceed as follows:

- turn off the machine;
- disconnect the supply cable;
- remove the 4 plastic feet;
- remove the 4 screws inside the housing for the feet;
- remove the cover carefully, paying attention to the wiring.

Checking the wiring

Check that all the connectors are properly fitted.

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10 WASTE DISPOSAL

EU regulations establish special arrangements for the disposal of waste (**)

Waste deriving from the machine

The machine produces no waste during its use.

Machine

The machine is made of re-usable materials. Re-cycling is recommended ecological practice.

Packing

The machine is consigned in a cardboard packing box which can be re-used if undamaged. When it is to be thrown away it is classified as solid urban waste and it should be placed in the special paper collecting bins.

INFORMATION FOR USERS

as per art. 10 of Directive 2002/96/CE of 27/01/2003
regarding waste from electric and electronic appliances (RAEE),

- The symbol illustrated above, also found on the machine, indicates that it has been placed on the market and must be included in separate rubbish collection when the user wishes to dispose of it (including all components, sub-assemblies and consumables that are integrated in the product).
- For information about the collection system for such appliances please contact SILCA S.p.A. or another subject registered in the various National Rolls for other countries in the European Union. Household waste (or of similar origin) can be included in the separate collection system for urban waste.
- On purchasing a new appliance of equivalent type, the old one can be consigned to the dealer. The dealer will then contact whoever is responsible for collecting the appliance.
- Suitable separate collection of the unused appliance and its dispatch for treatment, recovery and environmentally compatible disposal, makes it possible to avoid potential negative effects on the environment and human health, and aids recycling and the recovery of the materials used.
- Unauthorised disposal of the product by users involves the application of the sanctions provided for in received Directives 91/156/CE and 91/689/CE.

11 ASSISTANCE

Silca provides full assistance to purchasers of the machine. To ensure complete safety for the operator, any job not specified in this manual should be carried out by the manufacturer or in the special Service Centres recommended by Silca.
On the back cover of this manual there is a list of the Service Centres and relative addresses.

11.1 How to request service

The guarantee attached to the machine ensures free repairs or replacements of faulty parts within 12 months of purchase. All other service calls must be arranged by the customer with Silca or with a Silca service centre.

(**) Waste is any substance or object deriving from human activity or natural cycles, thrown away or to be thrown away.

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Silca S.p.A.
Vittorio Veneto

VITTORIO VENETO 11/11/2005

CE DECLARATION OF MACHINE COMPLIANCE

SILCA S.p.A. - VIA PODGORA 20 (Z.I.)
31029 VITTORIO VENETO (TV) - (ITALY)
TEL. 0438 9136 - FAX. 0438 913800

Declares under its own responsibility that the **Duplicating machine For Transponder Keys** model

RW3

complies with the requirements of the following European Directives:

European Union **DIRECTIVE 89/336/CEE** (Electromagnetic Compatibility)
and with the EN 55022 / EN 50082 – 1 / EN 300 330 – 1 :2002
EN 300 330 – 2 :2002 Standards

General Manager Basic Production Center

Corrado Fischer

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